



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,367	12/03/2003	Atsuo Sakai	09856/0200433-US0	6393
7278	7590	11/17/2006	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			BEHNCKE, CHRISTINE M	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,367

Applicant(s)

SAKAI, ATSUO

Examiner

Christine M. Behncke

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,23 and 24 is/are rejected.
- 7) ☒ Claim(s) 1,3-22 and 25-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/15/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the application filed 3 December 2003, in which claims 1-39 were presented for prosecution.

Drawings

2. Figures 24 and 25 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. The specification only discusses Figures 24 and 25 as illustrating a conventional steering control device; this suggests that the figures are merely demonstrating prior art. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. **Claim 1** is objected to because of the following informalities: The term "in exceptional situations" in claim 1 is a relative term which is not clearly defined. The term "exceptional situation" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of this limitation. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugitani et al., US 6,239,568.

(Claim 1) Sugitani et al. discloses in a steering control device equipped with: a turning mechanism including a turning actuator driving a position-controllable turning shaft (column 4, lines 27-46); and a steering angle sensor detecting a steering angle θ of a steering wheel (column 4, lines 40-46), a steering control device comprises: a turning displacement sensor detecting a turning displacement X ($-X_E \leq X \leq +X_E$) in said turning mechanism (column 4, lines 47-57); and means for calculating a turning instruction value calculating an instruction value for a turning displacement in said turning mechanism based on said steering angle θ (column 4, line 47-column 5, line 7); wherein: said turning instruction value calculating means includes means for generating hysteresis characteristics calculating (column 5, lines 51-55), in exceptional situations where an absolute value $|\theta|$ of said steering angle θ exceeds a predetermined threshold value θ_E corresponding to an upper limit X_E of said turning displacement X (column 9, lines 31-62), said instruction value X_n based on: a vertical axis coordinate corresponding to said steering angle θ on a predetermined hysteresis loop with one side being a section of a line $X_n = \pm X_E$ on a θ - X_n plane (Figures 1, 9, 18); and a steering direction of said steering wheel (Figures 1, 9, 18).

(**Claim 23**) Sugitani et al. further discloses varying a steering angle threshold dynamically changing upper and lower limits of a predetermined tolerance range of said steering angle based on an automobile velocity (Figures 5 and 12).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugitani et al. in view of Kanda, US 6,389,342.

(**Claim 2**) Sugitani et al. discloses the steering control device as applied to claim 1, but does not disclose wherein the turning mechanism and steering wheel are mechanically separated and an electrical coupling mechanism substitutes for a connecting mechanism. However, Kanda teaches that it was well known in the art for conventional steering systems to be substituted with linkless steering apparatuses, or steer-by-wire systems, wherein an electrical coupling mechanism substitutes for a connecting mechanism connecting a steering mechanism and a turning mechanism (column 1, lines 28-64). Kanda suggests it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute a conventional steering system with a linkless steering apparatus because the linkless system has the advantages of reduced weight and space, but maintains reliability (column 1, lines 28-64).

(Claim 24) Sugitani et al. further discloses varying a steering angle threshold dynamically changing upper and lower limits of a predetermined tolerance range of said steering angle based on an automobile velocity (Figures 5 and 12).

Allowable Subject Matter

Claims 3-22 and 25-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

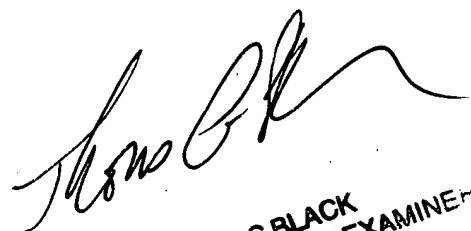
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB



THOMAS BLACK
SUPERVISORY PATENT EXAMINER